UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,222	10/10/2003	Allan O. Devantier	11336-433 (P03059US)	8660

757 7590 05/02/2007

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610

EXAMINER	
PAUL, DISLER	

ART UNIT	PAPER NUMBER
2615	

MAIL DATE	DELIVERY MODE
05/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/684,222	DEVANTIER ET AL.	
	Examiner	Art Unit	
	Disler Paul	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-116* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-116* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/12/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1,27 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of each claims 1,16 of copending Application No.10684208.

3. Re claims 15,81,105-107 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of each claims 48,66,51 of copending Application No.10684208.

This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5;8-9;14-25,27-38,46; 50-53; 60-66;68-72;74-78;81-82;86-90;94,96,98-102;105-109;111-116 are rejected under 35 U.S.C. 102(e) as being anticipated by Rabinowitz et al. ("2003/0179891").

Re claim 1, Rabinowitz et al. disclose a method for selecting a configuration for an audio system ("*fig.1,3-5; page 2[0021] line 24-29/speakers configure to be placed in varying listening positions*"), the method comprising: generating acoustic signals from at least one loudspeaker placed at potential loudspeaker locations; recording transfer functions at a plurality of listening positions for the generated acoustic signals ("*page 1[0003] line 8-14; fig.1/microphones (16) pick up generated signals received via (14-1….14-n) and stored at (20); all data stored from plurality of listening position as fig.3; and page 3[0027] line 11-14*"); determining at least one potential number of speakers ("*fig.1/(14-1-14-6/selected number of speakers at*

varying position is already known"); modifying the transfer functions based on the potential number of speakers in order to generate predicted transfer functions ("*Page 4/(line 29-32/frequency response for the combine output speakers is possible and further predetermined frequency response in page 2[0012] line 5-6*"), statistically analyzing across at least one frequency of the predicted transfer functions for the plurality of listening positions ("*FIG.1(18/ with more specifically fig.4(s56-58)/equalizing compared/analyzed to stored desired speaker characteristic location and update with filter; page page 5[0035] line 3-8*") and selecting a configuration based on the statistical analysis ("*page 3[0024]; with fig.1(19); fig.3/speaker selection and equalize correction based on analysis*")

Re claim 2, The method of claim 1, where the configuration comprises at least one parameter that affects acoustical performance of the audio system ("*fig.3-4; page 4[0028] /positional and equalization corrections/ volume controls*"); where determining potential configurations comprises determining potential values for the parameter ("*fig.4*"); where modifying the transfer functions comprises modifying the transfer functions based on the potential values for the parameter; and where selecting a configuration comprises selecting a value for the parameter("page 4[0030]").

Re claim 3, the method of claim 2, where determining potential values for the parameter comprises inputting potential values for the parameter ("*page 4[0030] line 8-13; page 5[0033]*").

Re claim 4, the method of claim 2, where the configuration comprises at least two parameters that affect acoustical performance of the audio system; and where determining potential configurations of the audio system comprise determining potential combinations of potential values of the parameters ("*fig.4; page 5[0031]/corrections, equalization parameters*").

Re claim 5, the method of claim 2, where the parameter is selected from the group consisting of positions of the loudspeakers, number of loudspeakers, types of loudspeakers, and correction factors ("*see claim 4; and fig.3(20-1); page 2 line 11-18/ speaker characteristics*").

Re claim 8, the method of claim 1, where recording transfer functions at a plurality of listening positions comprises placing a microphone at each of the listening positions and recording the transfer functions ("*fig.1(16); fig.3-4; page 2[0021] line 30-37*").

Re claim 9, the method of claim 1, where the statistical analysis is across a plurality of frequencies of the predicted transfer functions ("*page 4[0029] line 22-24; fig.4(460); page 4[0028]*").

Re claim 14, the method of claim 1, where selecting a configuration comprises automatically recommending a plurality of potential configurations ("*page 3[0024]; [0027], fig.3/automatically correct (equalize), number speakers*"); and manually selecting one of the plurality of potential configurations ("*fig.4 (43,48,52); page 4[0029]*").

Re claim 15 has been analyzed and rejected with respect to claim 1.

Re claim 16, the machine readable medium of claim 15, where the instructions for recording transfer functions comprise instructions for storing the transfer functions in a memory ("*fig.1*").

Re claims 17-18 have been analyzed and rejected with respect to claim 3,4 respectively.

Re claims 19-24 have been analyzed and rejected with respect to claims 9-14 respectively.

Re claim 25, Rabinowitz et al. disclose a computer system for analyzing potential configurations in an audio system, the computer system comprising: a memory storing transfer functions recorded at a plurality of listening positions in the audio system; and a processor in communication with the memory, the processor determining potential configurations of the audio system ("*fig.1(12,18-20)*"), modifying the transfer functions based on the potential configurations in order to generate predicted transfer functions ("*Page 4/(line 29-32/frequency response for the combine output speakers is possible and further predetermined frequency response in*

page 2[0012] line 5-6", statistically analyzing across at least one frequency of the predicted transfer functions ("*FIG.1(18/ with more specifically fig.4(s56-58)/equalizing compared/analyzed to stored desired speaker characteristic location and update with filter; page page 5[0035] line 3-8*"), and recommending at least one of the potential configurations based on the statistical analysis("*fig.4 (48,52); page 4[0029]*").

Re claim 27, Rabinowitz disclose a method for selecting a configuration for an audio system, the method comprising: recording transfer functions at at least one listening position in the audio system ("*fig.4 (59);fig.3*"); determining potential configurations of the audio system and modifying the transfer functions based on the potential configurations in order to generate predicted transfer functions("*fig.4/ (48)/each loudspeaker the function determined and adjustment for volume is made*"); statistically analyzing the predicted transfer functions; and selecting a configuration based on the statistical analysis("*fig.1(19); page 4[0030]*").

Re claims 28-29 have been analyzed and rejected with respect to claim 2,5 respectively.

Re claim 30, the method of claim 27, where the transfer functions measure at least one acoustical property of the audio system ("*page 2[0020] line 10; fig.1 (19)*").

Re claim 31, has been analyzed and rejected with respect to claim 9.

Re claim 32, the method of claim 27, where the loudspeaker is a subwoofer ("*fig.1(12,24); page 2[0021] line 11-27*").

Re claim 33, the method of claim 27, where the audio system comprises a plurality of loudspeakers ("*fig.1(14)*").

Re claim 34, the method of claim 27, where the configuration comprises potential loudspeaker locations; and where recording transfer functions comprises generating acoustic signals from the loudspeaker placed at each of the potential loudspeaker locations; and recording the transfer functions for the listening position for the generated acoustic signal ("*fig.3,4; page 3[0023]*").

35. The method of claim 34, where generating acoustic signals from the loudspeaker placed at each of the potential loudspeaker locations comprises placing the loudspeaker at a first potential position and controlling the audio system to generate an acoustic signal("*fig.1(14);fig.3*"); and where recording transfer functions at the plurality of listening positions comprises placing a microphone at a first listening position and recording the acoustic signal and placing the microphone at a second listening position and recording the acoustic signal ("*fig.3*").

Re claim 36, the method of claim 27, where recording transfer functions comprises recording transfer functions for a plurality of listening positions ("*fig.3*").

Re claim 37, the method of claim 28, where determining potential values for the parameter comprises selecting a discrete number of potential configurations ("*page 4 [0030] specific value chosen*").

Re claim 38, the method of claim 28, where determining potential values for the parameter comprises selecting a range of potential values ("*fig.4; page 4 [0030]/ volume ranges*").

Re claim 46, the method of claim 27, where the configuration comprises correction factors; where potential configurations comprise potential values for the correction factors; and where modifying the transfer functions based on the potential configurations comprises modifying the transfer functions for potential values for the correction factors to generate predicted transfer functions for each of the potential values ("*page 4 [0030]; fig.4*").

Re claim 50, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions; and where statistically analyzing the predicted transfer functions comprises analyzing the predicted transfer functions across the plurality of listening positions ("*fig.3-4*").

Re claim 51, the method of claim 50, where analyzing the predicted transfer functions across the plurality of listening positions is a function of frequency("*page 4 [0029] line 22-24; fig.4(460); page 4 [0028]*").

Re claims 52 has been analyzed and rejected with respect to claim 50.

Re claim 53, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions ("*see claim 1*"); and where the statistical analysis indicates consistency of the predicted transfer functions across the plurality of listening positions ("*col.3 line 9-13; page 3 [0025]*").

Re claim 60, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions; and where the statistical analysis indicates differences in overall sound pressure level among the plurality of listening positions for the predicted transfer functions ("*page 1 [0010]*").

Re claim 62, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions ("*fig.3*"); and where the statistical analysis indicates efficiency of the predicted transfer functions at the plurality of listening positions ("*page 3 [0022] line 9-12/desired response*").

Re claim 63, the method of claim 62, where efficiency is examined for predetermined frequencies ("*page 4[0029] and fig.4 (46)-frequency band of interest*").

Re claim 64, the method of claim 63, where selecting a configuration based on the statistical analysis comprises selecting a value for a parameter to increase efficiency of the audio system in the predetermined frequencies ("*page 4[0030]*").

Re claim 68 has been analyzed and rejected with respect to claim 64 above.

65. The method of claim 64, where the parameter comprises volume correction; and where selecting a value to increase efficiency comprises selecting a value that decreases the volume of at least one of the loudspeakers in the audio system ("*see claim 64*").

Re claim 66, the method of claim 27, where the statistical analysis comprises acoustic efficiency ("*fig.1/speaker sound*").

Re claim 69, has been analyzed and rejected with respect to claim 64.

Re claims 61, has been analyzed and rejected with respect to claim 58.

Re claim 70, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening

positions; and where the statistical analysis indicates output of predicted transfer functions at the multiple listening positions ("*see fig.1*").

Re claim 71, the method of claim 70, where output is examined for predetermined frequencies ("*page 1[0007]; [0009]/sensor to pick output*").

Re claim 72, the method of claim 71, where selecting a configuration based on the statistical analysis comprises selecting a value for a parameter to increase output of the audio system in the predetermined frequencies("*page 4[0029-0030]*").

Re claim 74, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions ("*see claim 1*"); and where the statistical analysis comprises mean overall level ("*page 4[0031] line 25-28*").

Re claim 75, the method of claim 27, where selecting a configuration comprises selecting one of the potential values of the parameter ("*see claim 2*").

Re claim 76, the method of claim 27, where selecting a configuration comprises manually selecting a configuration ("*fig.1(22); page 3[0022] line 27-29*").

Re claim 77, the method of claim 27, where selecting a configuration comprises automatically selecting a configuration ("*see claim 14a*").

Re claim 78, the method of claim 77, where a plurality of statistical analyses are performed; and where selecting a configuration is based on weighting the plurality of statistical analyses ("*fig.4(42-54)*").

Re claims 81 has been analyzed and rejected with respect to claim 15.

Re claim 82, has been analyzed and rejected with respect to claim 17.

Re claim 86 has been analyzed and rejected with respect to claim 2.

Re claim 87 has been analyzed and rejected with respect to claim 10.

Re claim 88-89 has been analyzed and rejected with respect to claim 50-51.
Re claim 90 has been analyzed and rejected with respect to claim 52.

Re claim 94, the machine readable medium of claim 81, where the statistical analysis indicates how much equalization is necessary for the predicted transfer functions ("*page 3[0022] line 9-13; fig.3*").

Re claim 96, the machine readable medium of claim 81, where the instructions for recording the transfer functions comprise instructions for recording the transfer functions at a plurality of listening positions ("*fig.3*"); and where the statistical analysis indicates differences in overall sound

pressure level among the plurality of listening positions for the predicted transfer functions ("*page 1[0010]*").

Re claim 98 has been analyzed and rejected with respect to claim 62.

Re claim 99, the machine readable medium of claim 81, where the statistical analysis omprises acoustic efficiency ("*fig.1 (14,19),sound*").

Re claim 100, the machine readable medium of claim 81, where the statistical analysis comprises mean overall level ("*page 4[0031] line 25-29*").

Re claim 101, the machine readable medium of claim 81, further comprising instructions for recommending at least one of the potential configurations ("*page 3[0027]/ equalize*").

Re claim 102, the machine readable medium of claim 101, where a plurality of statistical analyses are performed ("*fig.3*"); and where the instructions for recommending at least one of the potential configurations is based on weighting the plurality of statistical analyses ("*fig.4(54)*").

Re claim 105-106 has been analyzed and rejected with respect to claim 1.

Re claim 107, Rabinowitz In an audio system comprising at least one loudspeaker and a plurality of listening positions, a system for analyzing potential configurations comprising: means for storing transfer functions

recorded at at least one listening position ("*fig.1(20);, fig.3*"); means for determining potential configurations for the audio system ("*fig.1(18)*"); means for modifying the transfer functions based on the potential configurations in order to generate predicted transfer functions ("*fig.1(18)*"); and means for statistically analyzing the predicted transfer functions ("*fig.1 (19)*").

Re claim 108, the system of claim 107, where means for recording potential configurations for the audio system comprises means for recording parameters for the configurations ("*fig.1(16)*"), the parameters selected from the group consisting of positions of the loudspeakers, number of loudspeakers, types of loudspeakers, and correction factors ("*see claim 5*").

Re claim 109, The system of claim 107, where means for storing transfer functions comprises means for storing transfer functions recorded at a plurality of listening positions; and where means for statistically analyzing comprises means for analyzing the predicted transfer functions across the plurality of listening positions ("*fig.3*").

Re claim 111, Rabinowitz disclose an audio system comprising at least one loudspeaker and a plurality of listening positions ("*fig.1,3*"), a system for analyzing potential configurations comprising: storage means for storing transfer functions recorded at the plurality of listening positions and processor means for determining potential configurations for the audio system, for modifying the transfer functions based on the potential configurations in order to generate predicted transfer functions, and for statistically analyzing the predicted transfer functions ("*fig.1, claim 1*").

Re claim 112, the system of claim 111, where the processor means further recommends at least one of the potential configurations based on the statistical analysis ("*fig.4*").

Re claim 113 has been analyzed and rejected with respect to claim 9.

Re claims 114,116 have been analyzed and rejected with respect to claim 25,9 respectively.

Re claim 115, the computer system of claim 114, where the processor further recommends at least one of the potential configurations based on the statistical analysis ("*fig.4 (48,52); page 4[).*

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 10-13,26;54-56, 58-59;92-93;95,97,110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1")

Re claim 10, the method of claim 9, However, the combined teaching of Rabinowitz and Saito as a whole, fail to disclose of the limitation wherein the plurality of frequencies are less than 120 Hz. However, Official Notice is taken that the limitation of analyzing the plurality of frequencies are less than 120 Hz is simply the inventor's preference. Thus, official Notice is taken that it would have been obvious for one of the ordinary skill in the art to modify the combined teaching of Rabinowitz and Saito as a whole, by incorporating the limitation wherein the plurality of frequencies are less than 120 Hz for the purpose of equalizing to a pleasing frequency response.

Re claim 11, the method of claim 1, However, the teaching of Rabinowitz et al. fail to disclose of the limitation where the statistical analysis is selected from the group consisting of mean spatial variance, mean spatial standard deviation, mean spatial envelope, and mean spatial maximum average. However, Official Notice is taken that the concept of doing statistical analysis from the group consisting of mean spatial variance, mean spatial standard deviation, mean spatial envelope, and mean spatial maximum average is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have modified Rabinowitz and Saitio as a whole, by incorporating the statistical analysis being selected form the group of mean spatial variance, mean spatial standard deviation, mean spatial envelope for the purpose of determining the probabilities of occurrences.

Re claim 54, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions ("*see claim 1*"); and where the statistical analysis is selected from the group consisting of mean spatial variance, mean spatial standard deviation, mean spatial envelope, and mean spatial maximum average ("*see claims 11*").

Re claim 55, the method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions; and where the statistical analysis comprises mean spatial variance ("*see claim 11*").

Re claim 58. The method of claim 27, where recording the transfer functions comprises recording the transfer functions at a plurality of listening positions ("*see claim 1*"); and where the statistical analysis is selected from the group consisting of variance of spatial average, standard deviation of the spatial average, envelope of the spatial average, and variance of the spatial minimum("*see claim 11*").

Re claim 59, the method of claim 27, where the statistical analysis is selected from the group consisting of amplitude variance and amplitude standard deviation ("*see claim 11*").

RE claim 56, the method of claim 55, where the mean spatial variance is based on an average of spatial variance across the listening positions for a plurality of frequencies ("*see claim 11*").

Re claims 12-13,26,92-93,95,97,110 have been analyzed and rejected with respect to claim 11.

2. Claim 39-45; 47-49, 83-85; 6-7,31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1") and Tricknor ("5,638,343").

Re claim 39, the method of claim 28, However, Rabinowitz fail to disclose of the limitation wherein the parameter comprises loudspeaker locations. But, Tricknor disclose a system for multitrack wherein the parameter comprises loudspeaker locations ("*fig.1-2*") for the purpose of reproducing the multiple channel of sound. Thus, taking the combined teaching of Rabinowitz and Tricknor as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz by incorporating the limitation wherein the parameter comprises loudspeaker locations for the purpose of reproducing the multiple channel of sound.

The combined teaching of Rabinowitz and Tricknor as a whole, further teach of the recording transfer functions comprises recording transfer functions at the listening position with the loudspeaker in each of the plurality of potential loudspeaker locations ("*tricknor,fig.2 (202,204,104)*"); where determining potential configurations comprises

inputting a plurality of potential loudspeaker locations and determining potential combinations of the potential loudspeaker locations ("*Rabinowitz, fig.4*"); and where modifying the transfer functions comprises combining the transfer functions for the listening position for each of the potential combinations of loudspeaker locations to generate the predicted transfer functions ("*fig.4(54,48,52)*").

Re claim 83, has been analyzed and rejected with respect to claim 39.

Re claim 40, the method of claim 39, where the plurality of loudspeaker locations comprises a first potential loudspeaker location and a second potential loudspeaker location ("*fig.1-2; speakers at multiple potential locations*"); where recording transfer functions comprises: recording a first transfer function at a first listening position with the loudspeaker at the first potential loudspeaker location; recording a second transfer function at the first listening position with the loudspeaker at the second potential loudspeaker location ("*Tricknor, fig.1-2(106-114); (120,124)*"); recording a third transfer function at a second listening position with the loudspeaker at the first potential loudspeaker location and recording a fourth transfer function at the second listening position with the loudspeaker at the second potential loudspeaker location ("*Rabinowitz, fig.3(20-n)*"); where combining the transfer functions comprises: combining the first transfer function and the second transfer function; and combining the third transfer function and the fourth transfer function ("*page 4[0031] line 22-27; fig.4(54)*"); where statistically analyzing the predicted

transfer functions ("*fig.1(18,19*") is based on the first transfer function, the second transfer function, the third transfer function, the fourth transfer function ("*fig.4(48,52) analyzed separately*"), the combined first and second transfer function and the combined third and fourth transfer function ("*fig.4(54), may be combined for the average*").

Re claim 42, the method of claim 27, where the configuration comprises number of loudspeakers; where potential configurations comprise potential number of Loudspeakers; modifying the transfer functions based on the potential configurations ("*fig.1 (14)*"); However, Rabinowitz fail to disclose of the limitation of determining potential combinations of loudspeakers at potential loudspeaker locations.

But, Tricknor disclose a configuration of speakers wherein the limitation of determining potential combinations of loudspeakers at potential loudspeaker locations ("*Tricknor, fig.1-2(106-114); (120,124)*") for the purpose of reproducing the multiple channel of sound. Thus, taking the combined teaching of Rabinowitz et al. now Saito as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz et al. by incorporating the limitation of determining potential combinations of loudspeakers at potential loudspeaker locations for the purpose of reproducing the multiple channel of sound.

The combined teaching of Rabinowitz and Tricknor as a whole, further teach of the potential combinations being equal to at least one of the potential

number of loudspeakers ("*page3 [0024/select may be chosen*"); and combining the transfer functions for each of the potential combinations to generate predicted transfer functions for each of the potential combinations("*fig.4 (54)*").

Re claim 6, the method of claim 2, where the parameter comprises positions of the loudspeakers ("*fig.1,5(14)*"); and where determining potential configurations comprises: determining potential positions of the loudspeakers; and generating potential combinations of speakers based on the potential positions of the loudspeakers ("*see claim 39*"); and where modifying the transfer functions based on the potential combinations of speakers ("*fig.4(54,56)*"), while the combined teaching of Rabinowitz and Tricknor as a whole, disclose of the above, they fail to disclose of the modification of the transfer function comprised the superpositionning of the transfer functions. But, official notice is taken that the concept of superposition of functions for modifications is commonly known in the art, thus official notice is taken that it would have been obvious for one of the ordinary skill in the art to have incorporated the concept of superposition of functions for modifications for purpose of determining where the functions coincide.

Re claim 7, the method of claim 6, where the at least one parameter further comprises correction factors; and where the potential configurations are based on the potential combinations of speakers and the potential values for the correction factors ("*fig.3,page 3 [0027]*").

Re claim 41 has been analyzed and rejected with respect to claim 6.

Re claim 31 has been analyzed and rejected with respect to claim 6.

Re claim 49, has been analyzed and rejected with respect to claims 9 and 10 as a whole.

Re claim 43, the method of claim 28, where the parameter comprises types of loudspeakers ("*fig.1(14);page 2[0021]*"); where determining potential configurations comprises determining combinations of potential types of loudspeakers at potential loudspeaker locations ("*fig.3; page 3[0023]*"); where recording transfer functions comprises recording transfer functions at the listening position with each potential type of loudspeaker in each of the plurality of potential loudspeaker locations ("*see claim 39*"); and where modifying the transfer functions based on the potential configurations comprises combining the transfer functions for the listening position for each of the combinations to generate predicted transfer functions ("fig.3").

Re claim 44, the method of claim 43, where the types of loudspeakers comprises loudspeakers with different qualities ("*page 2[0021] line 11-30*").

Re claim 45, The method of claim 44, However, the combined teaching of Rabinowitz and Saito as a whole, fail to disclose the limitation of the potential types of loudspeakers comprise a dipole loudspeaker and a monopole

loudspeaker. However, Official Notice is taken that the limitation of of the potential types of loudspeakers comprise a dipole loudspeaker and a monopole loudspeaker is commonly know in the art, thus it would have been obvious for one skill in the art to have modified Rabinowitz and Saito as a whole, by incorporating the limitation of the potential types of loudspeakers comprise a dipole loudspeaker and a monopole loudspeaker for producing sound of radiation pattern.

Re claim 84, has been analyzed and rejected with respect to claim 46.

Re claim 47, the method of claim 46, where the correction factors comprise gain ("*page 4 [0029-0030]*"), and equalization ("*fig.3/equalize*"). However, Rabinowitz fail to disclose of the corrections factors comprises delay. But, official notice is taken that such limitation of a delay is commonly known in the art, thus it would have been obvious for one of the ordianary skill in the art to modify Rabinowitz by incorporating such gain and delay for the purpose of tuning or room compensations.

Re claim 85 has been analyzed and rejected with respect to claim 47.

9. Claims 57,67,91,73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1") and further in view of Johnson et al. ("US 7,184,556").

Re claim 57, the method of claim 27, However, the combined teaching of Rabinowitz et al. and Saito as a whole, fail to disclose of the further limitation where the statistical analysis indicate flatness for the predicted transfer functions. But, Jhonson et al. disclose of a system wherein the further limitation where the statistical analysis indicate flatness for the predicted transfer functions ("*col.20 line 44-47,fig.1(16);col.13 line 51-55; col.22 line 51-54, col.16 line 16-18/parameter in achieving flattess for predicted functions*")") for purpose of controlling and improving the transient response and efficiency of speaker. Thus, taking the combined teaching of Rabinowitz and Saito and now Johnson et al. as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz by incorporating the statistical analysis indicate flatness for the predicted transfer functions for purpose of controlling and improving the transient response and efficiency of speaker.

Re claim 91, the machine readable medium of claim 81, where the instructions for recording the transfer functions comprise instructions for recording the transfer functions at a plurality of listening positions ("*fig.3*"); and where the statistical analysis indicates flatness of the predicted transfer functions across the plurality of listening positions ("*see claim 57*").

Re claim 67, the method of claim 66 with the acoustic efficiency, However, Rabinowiz fail to disclose of the further limitation of the acoustic efficiency comprises a mean overall level divided by a total drive level for the predicted transfer function. However, official Notice is taken that the concept of determining the acoustic efficiency by a mean overall level divided by a total drive level if commonly known in the art. Thus, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz by incorporating the acoustic efficiency comprises a mean overall level divided by a total drive level for the purpose of determining the output level versus input sound level.

Re claim 73, the method of claim 72, where the parameter comprises volume correction; and where selecting a value to increase output ("*fig.1(18); fig.4(48,52);page 4[0030]*"); However, the teaching of Rabinowski fail to disclose of the selecting of the value to increase output comprise selecting a value that decreases the volume of at least one of the loudspeakers in the audio system. However, official notice is taken that such limitation of the selecting of the value to increase output comprise selecting a value that decreases the volume of at least one of the loudspeakers in the audio system is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to modify Rabinowski, by incorporating the selecting of the value to increase output comprise selecting a value that decreases the volume of at least one of the loudspeakers in the audio system for the purpose of monitoring the increasing output level.

9. Claims 79-80,103-104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1") and further in view of Sato et al. ("US 2003/0058786 A1").

Re claim 79, the method of claim 27, with the statistical analysis , However, Ranowski, fail to disclose of the limitation wherein the statistical analysis ranks the predicted transfer functions based on at least one metric, and where selecting a configuration comprises selecting a configuration based on the ranking. However, Sato et al. disclose a system in which the statistical analysis ranks the predicted transfer functions based on at least one metric, and where selecting a configuration comprises selecting a configuration based on the ranking ("*page 7[0077]; [0099]/metric-power,amplitude based on maximum or optimums*") for the purpose of enhancing receiving characteristic. Thus, taking the combined teaching of Ranowki and now sato as a whole, it would have been obvious for one of the ordinary skill in the art to modify Ranowski by incorporating the the statistical analysis ranks the predicted transfer functions based on at least one metric, and where selecting a configuration comprises selecting a configuration based on the ranking for the purpose of enhancing receiving characteristic.

Re claims 80,104 have been analyzed and rejected with respect to claim 79.

Re claim 103, the combined teaching of Ranowkin and Sato et al. as a whole, teach the machine readable medium of claim 101, where the instructions for the statistical analysis ranks the predicted transfer functions based on at least one metric, and where the instructions for recommending a configuration

comprise recommending a configuration based on ranking the at least one metric ("*fig.4*").

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-272-2222. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

4/30/07